

#5

FIGURE 1

AFP E1a and E1b Adenovirus Constructs

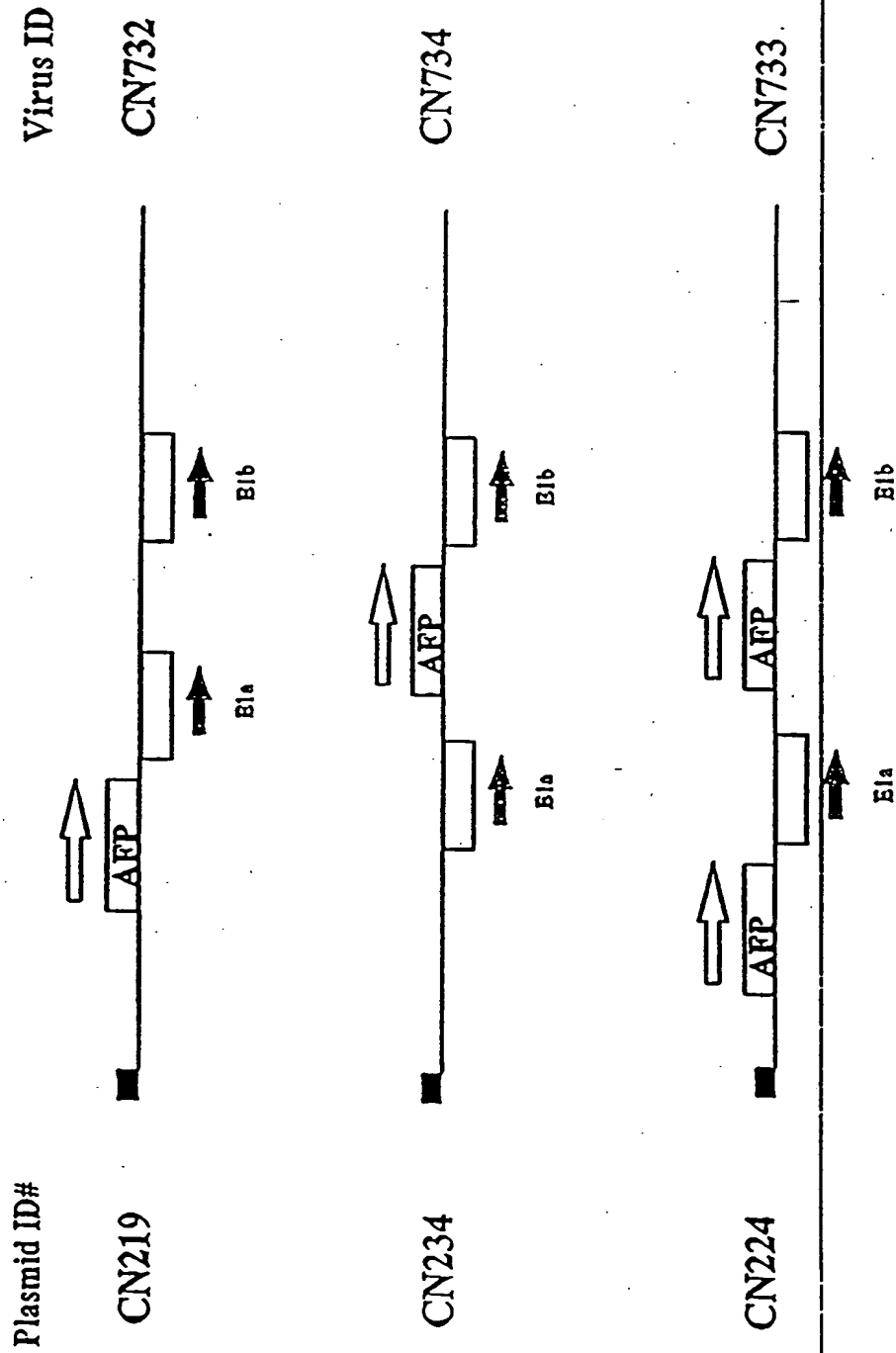


FIGURE 2A

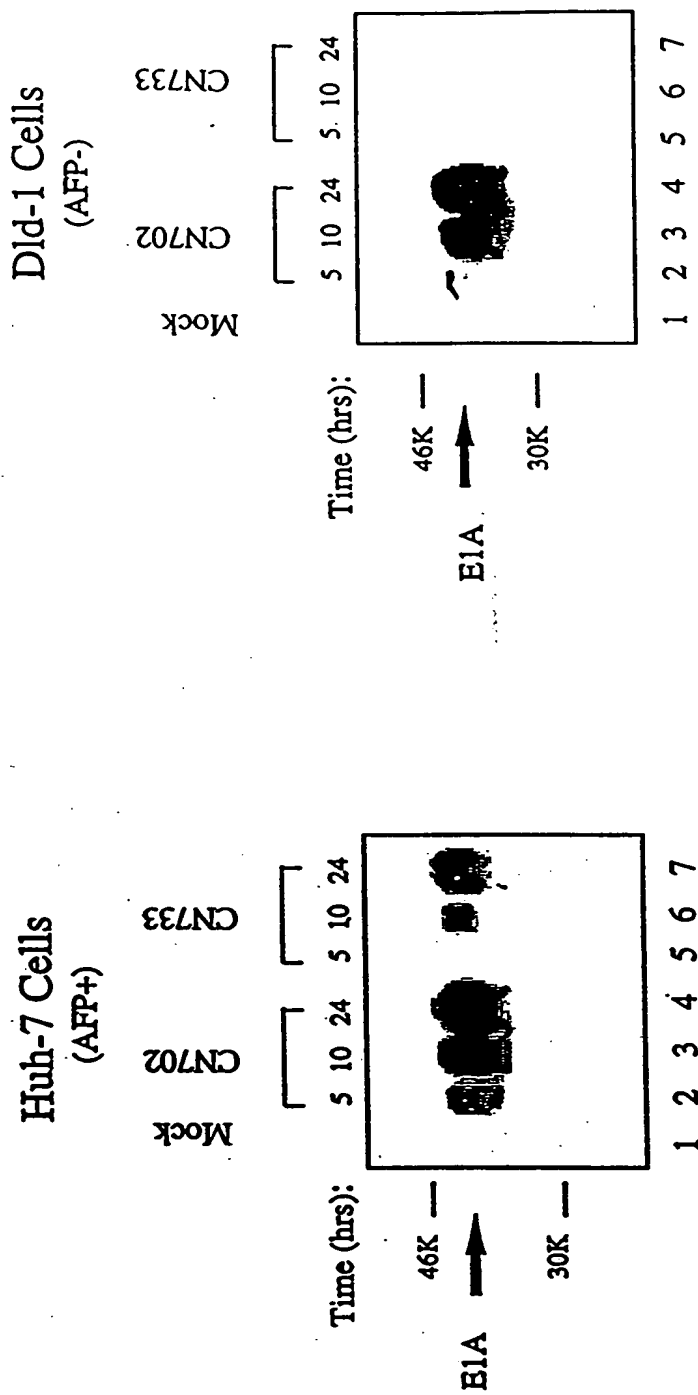


FIGURE 2B

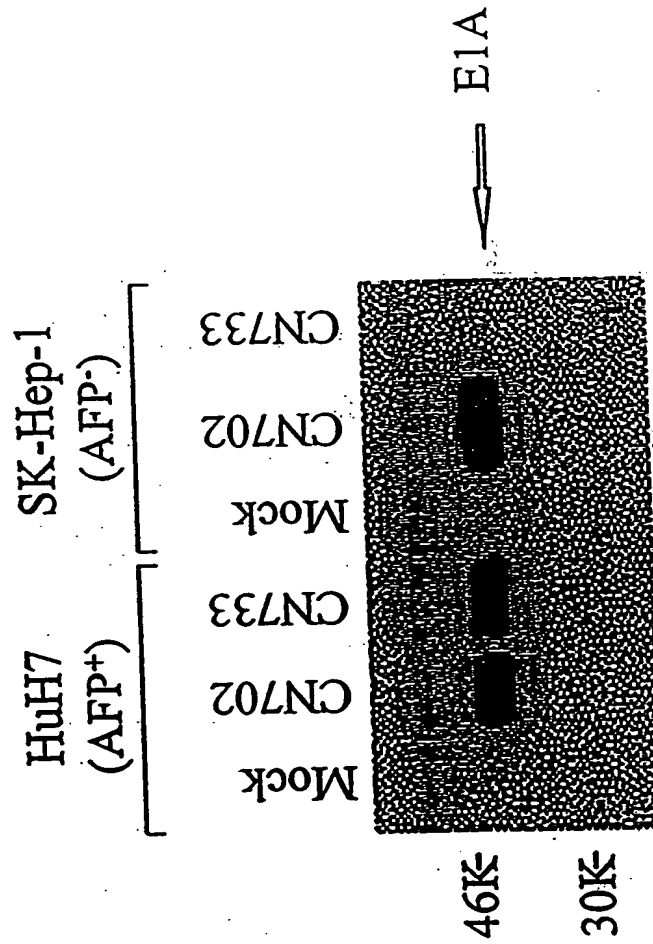
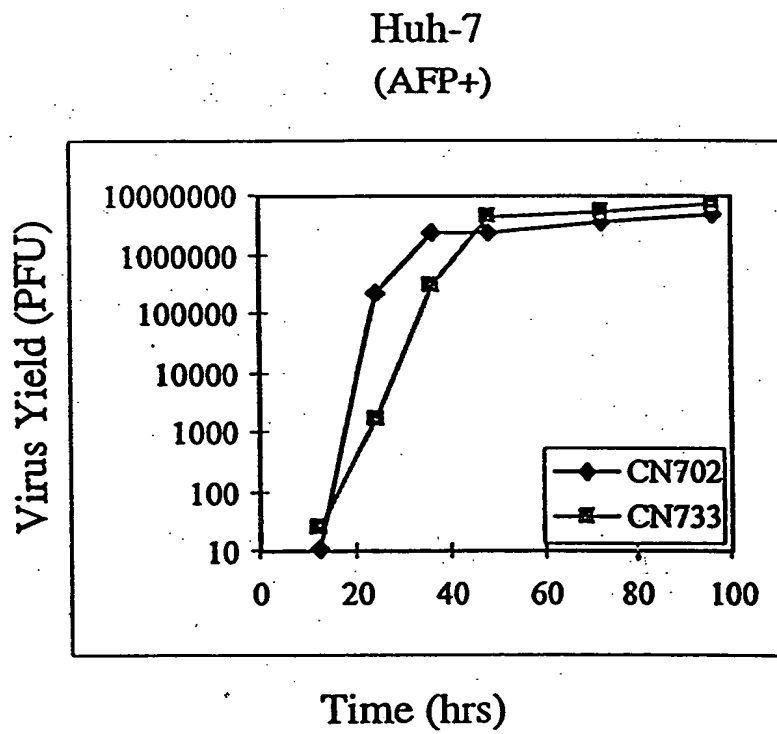


FIGURE 3A



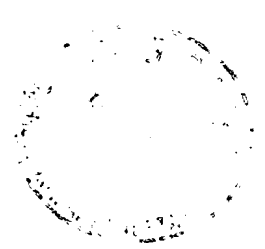


FIGURE 3B

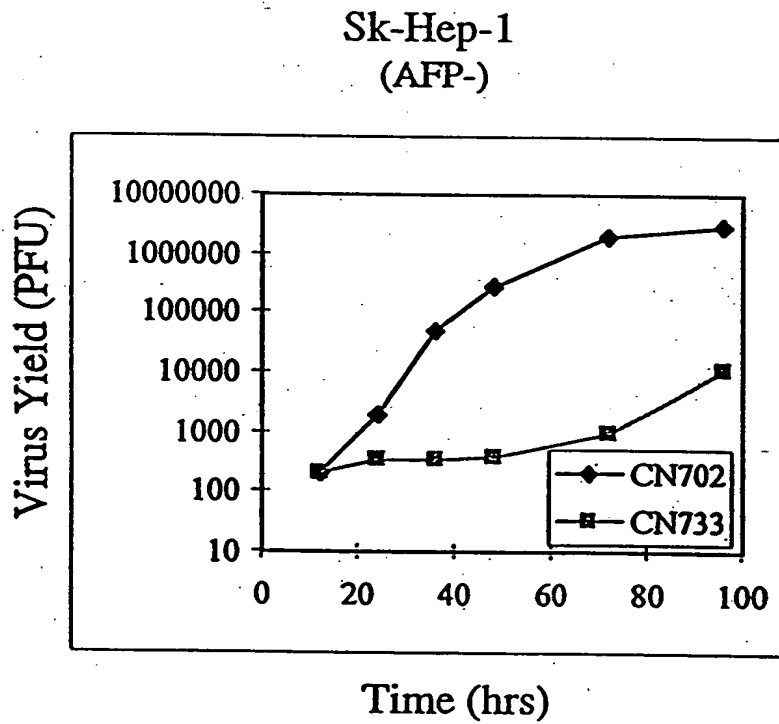


FIGURE 3B

FIGURE 3C

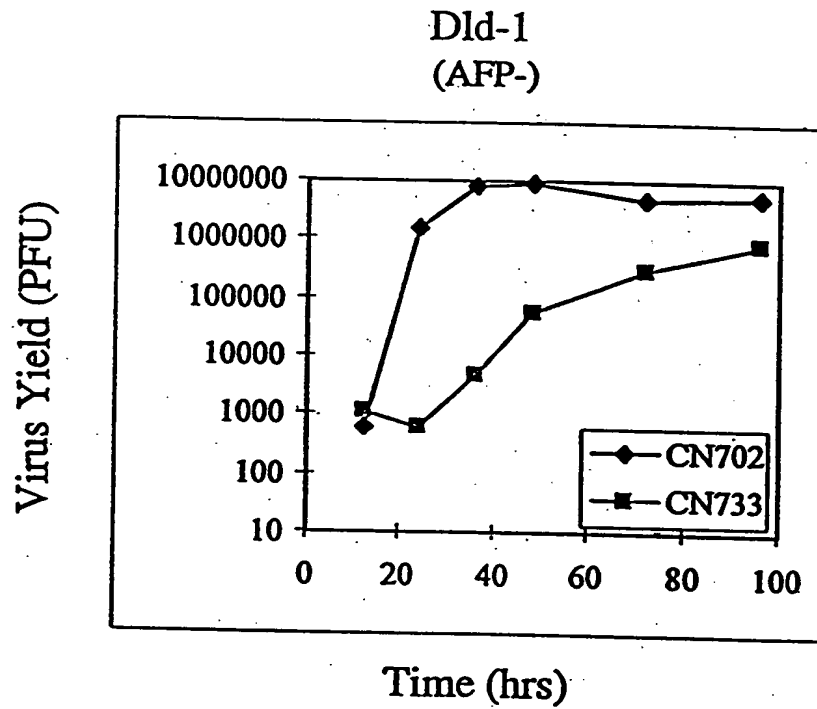
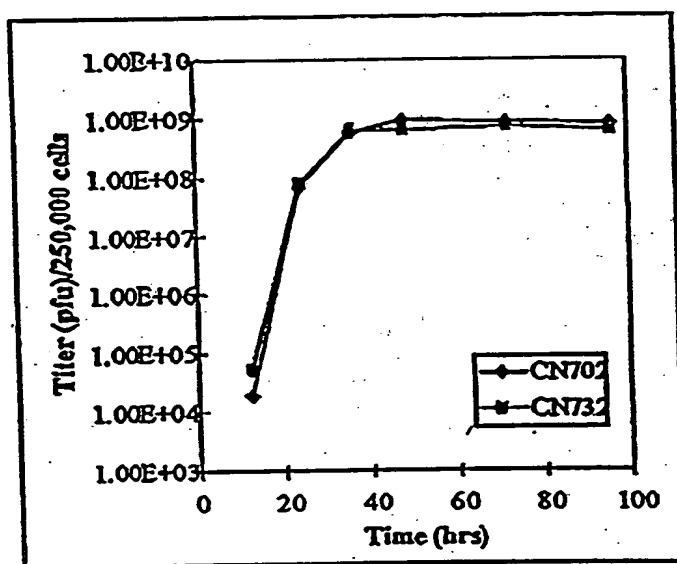


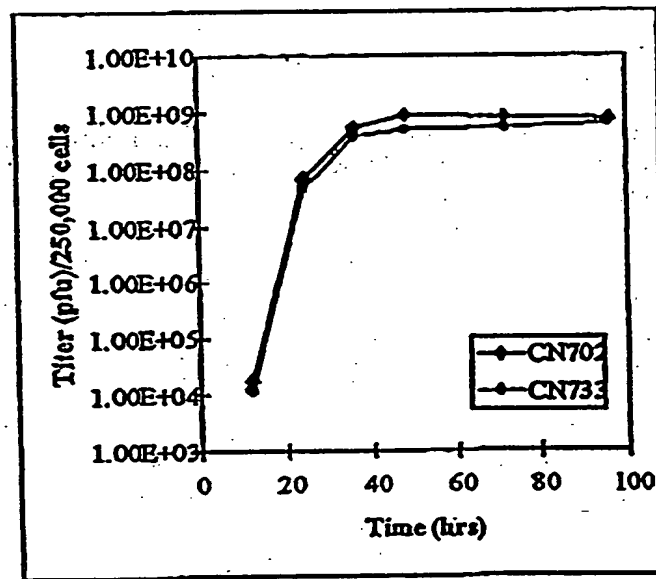


FIGURE 4A



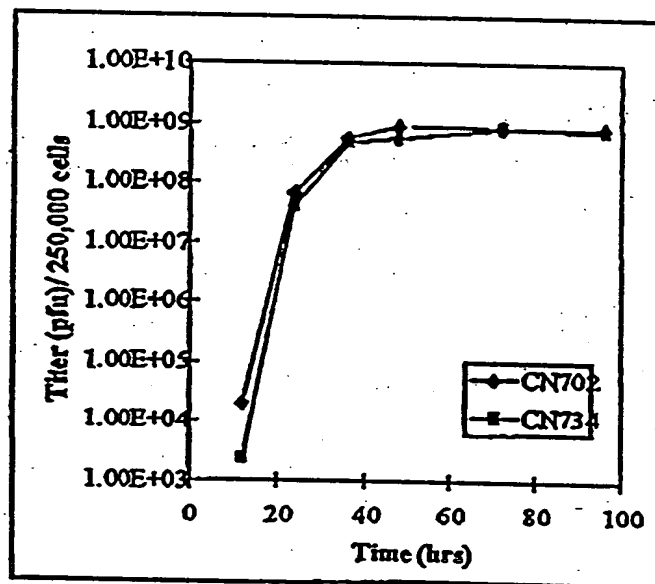
09732169.100201

FIGURE 4B



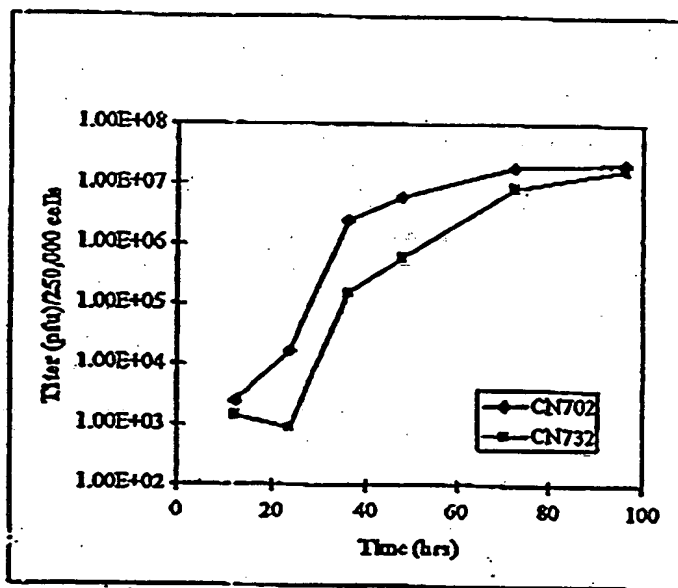
09732169-100001
FO200T-69T2E260

FIGURE 4C



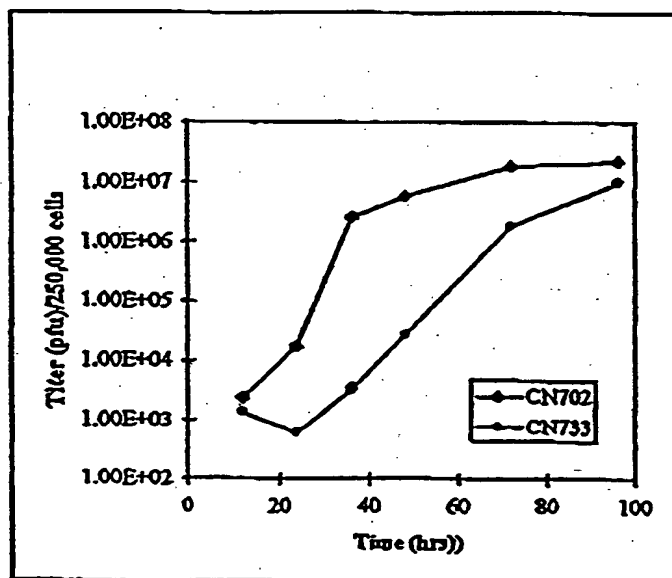
09/732,169-10001

FIGURE 5A



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FIGURE 5B



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FIGURE 6A

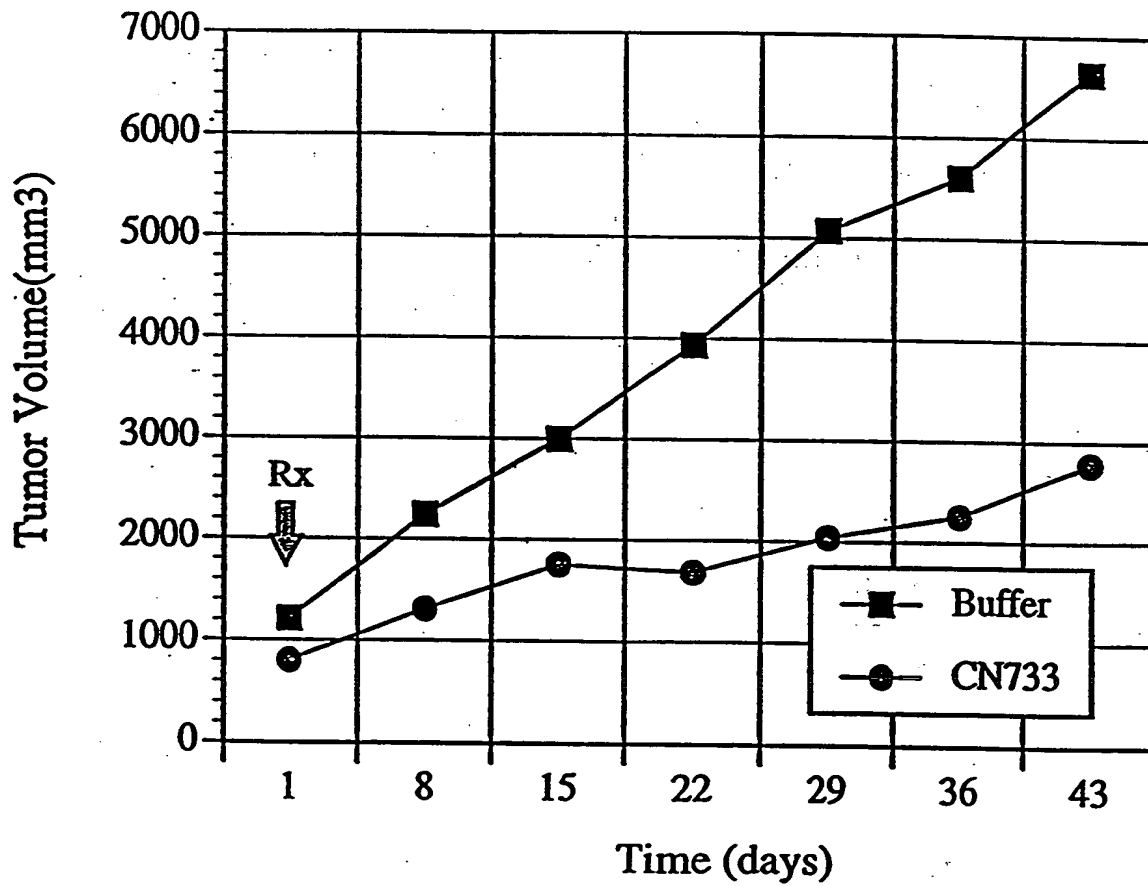
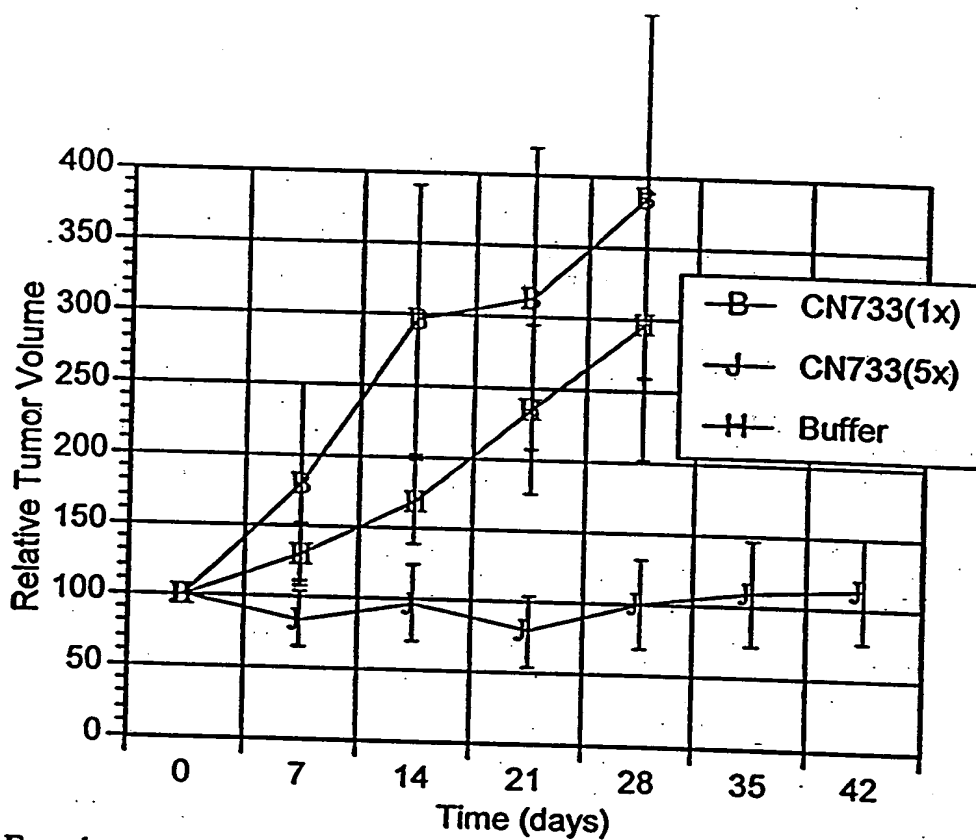


FIGURE 6B



Error bars = standard error

Animals from groups treated with a single dose of CN733 and buffer were sacrificed at 28 days because of excessive tumor burden



FIGURE 7

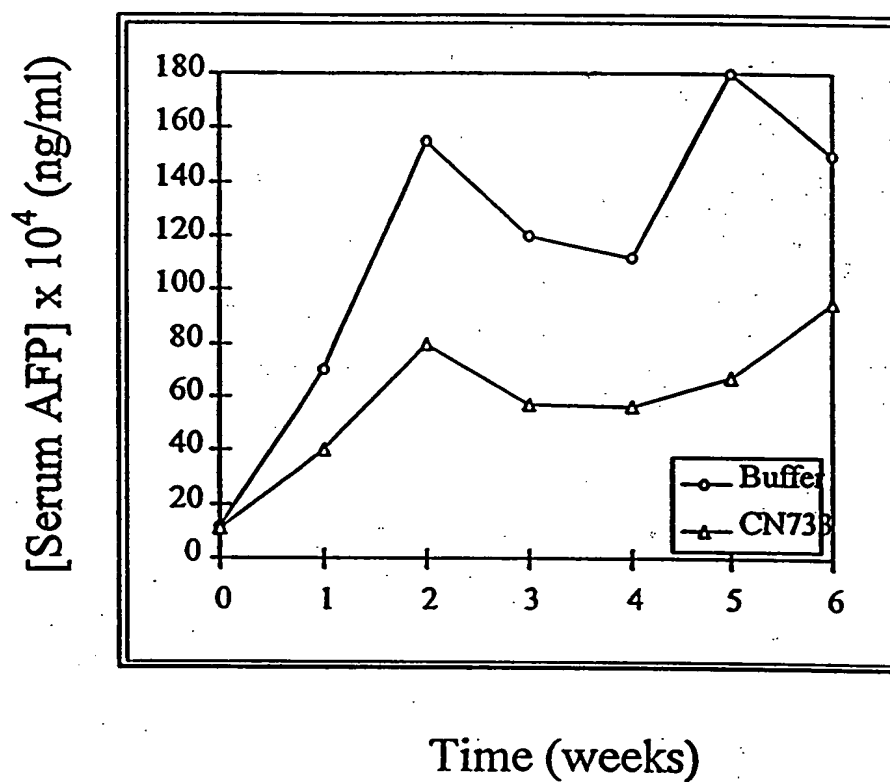
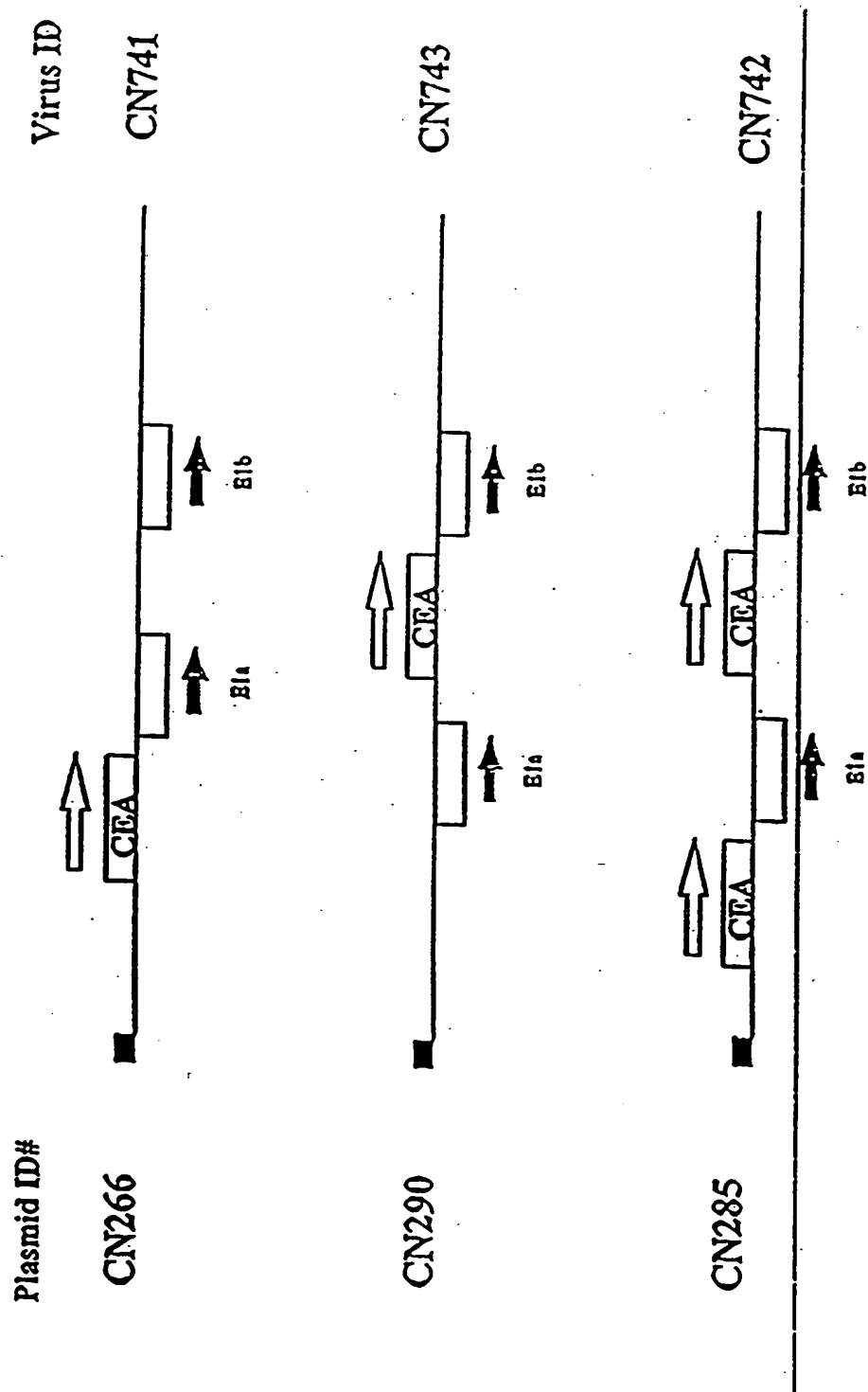




FIGURE 8
CEA E1a and E1b Adenovirus Constructs



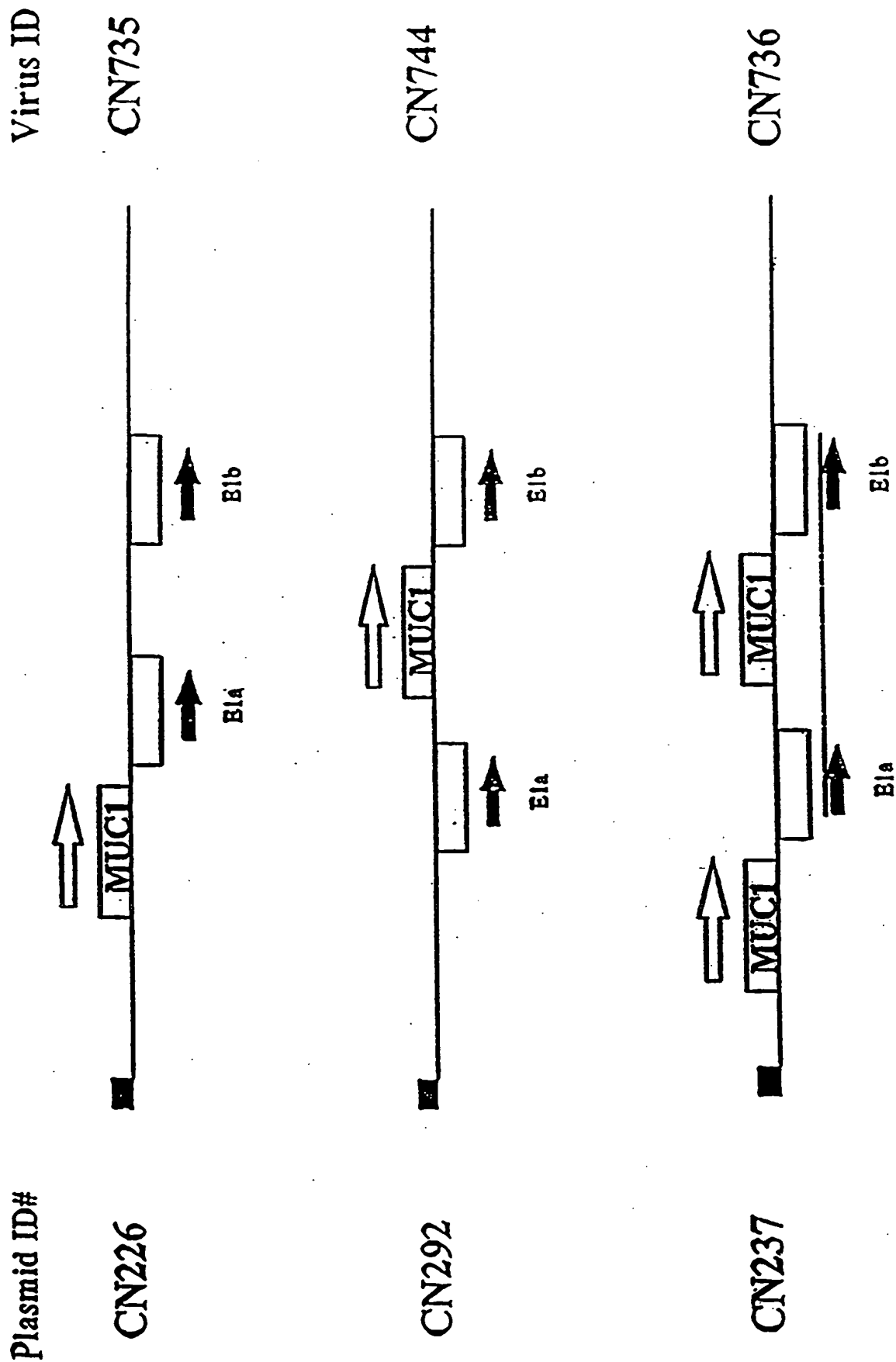


FIGURE 9



-426

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TCAGGTTCAATGGCGTTCAAACTTGATCAAAAATGACCAGACTTTATATTCTTA
CACCAACATCTATCTGATTGGAGGAATGGATAATAGTCATCATGTTTAAACATCT
ACCATTCAGTTAAGAAAATATGATAGCAATCTTGTCTTAGTCTTTTCTTAATA

ARE-1

GGGACATAAAGCCACAAATAAAAATATGCCTGAAGAATGGGACAGGCATJGG
GCATTGTCCATGCCTAGTAAAGTACTCCAAGAACCTATTGTATACTAGATGACA

ARE-2

CAATGTCAATGTCTGTGTACAACCTGCCAACTGGGATGCAAGACACTGCCCATG

+1

~~CCAAT~~CATCCTGAAAAGCAGCTATAAAAAGCAGGAAGCTACTCTGCAC~~CTT~~

CAAT box

TATAA box

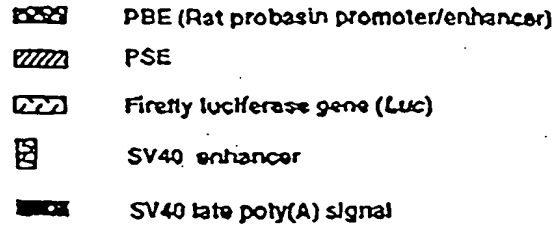
Transcription site

+28

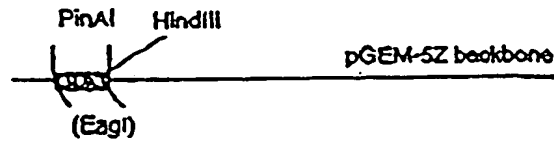
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09732169 100001 69726260

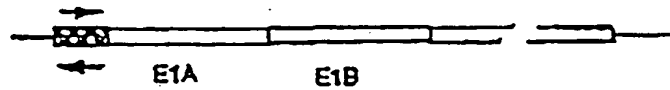
FIGURE 10



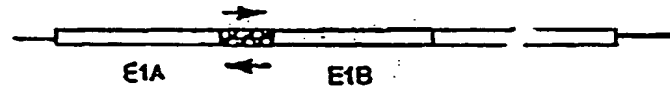
CN249
 (CN250)
 CN256
 CN271



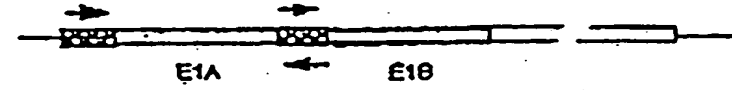
CN251
 CN253



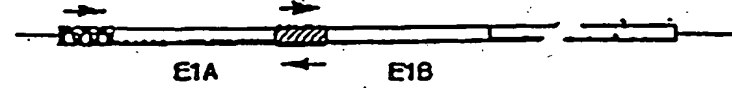
CN254 (CN275)
 CN255 (CN276)



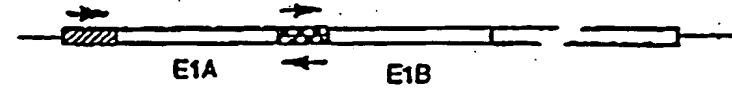
CN268
 CN269



CN257
 CN258



CN273
 CN274



CN280



CN281

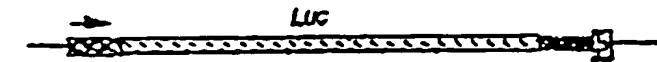


FIGURE 11

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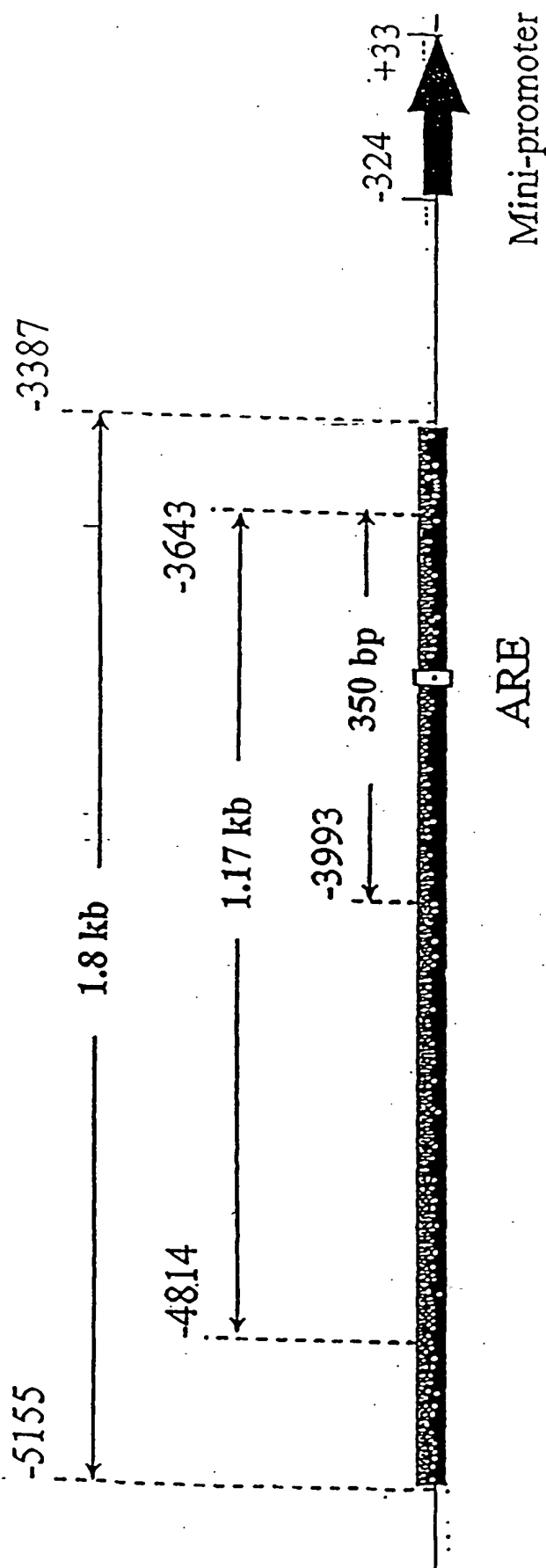
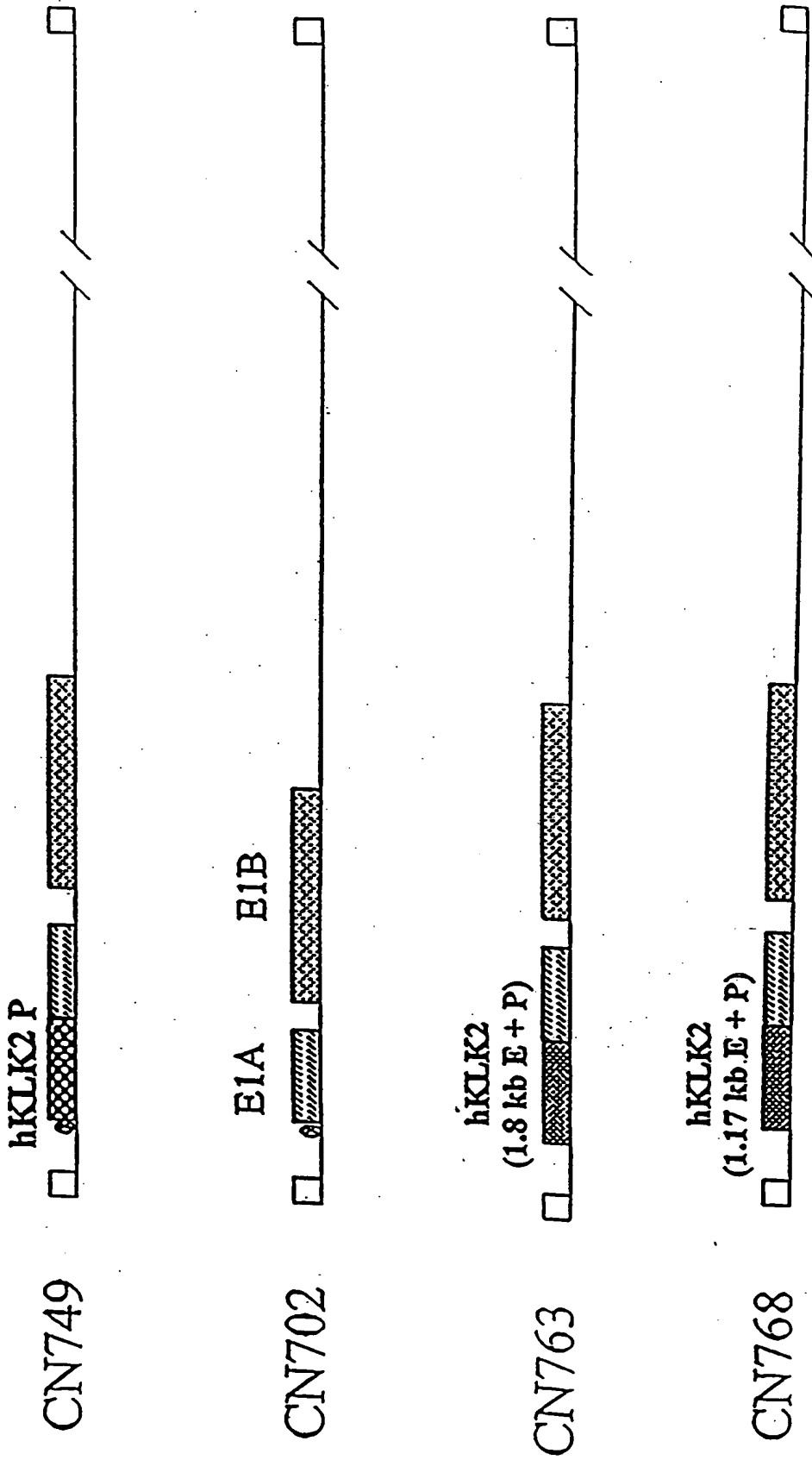


FIGURE 12

FIGURE 13



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FIGURE 14A

aagcttttta gtgctttaga cagtgaagctg gtctgtctaa cccaagtgaac ctggggtcca	60
tactcagccc cagaagtga ggggtgaagct ggggtggagcc aaaccaggca agcctaccct	120
caggggtccc agtggcctga gaaccattgg acccaggacc cattacttct agggtaagga	180
aggtacaaac accagatcca accatggtct ggggggacag ctgtcaaatg cctaaaaata	240
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ggcaacccaa agtccaaatc cagggtgagca ggtgcaccaa atgcccagag atatgacgag	360
gcaagaagtg aaggaaccac ccctgcatca aatgttttgc atgggaagga gaaggggggtt	420
gctcatgttc ccaatccagg agaatgcatt tgggatctgc cttcttctca ctccctgggtt	480
agcaagacta agcaaccagg actctggatt tggggaaaga cgtttatttg tggaggccag	540
tgatgacaat ccacgaggg cctaggtgaa gagggcagga aggctcgaga cactggggac	600
tgagtgaaaa ccacacccat gatctgcacc acccatggat gctccttcat tgetcacctt	660
tctgttgata tcagatggcc ccattttctg taccttcaca gaaggacaca ggctagggtc	720
tgtgcatggc cttcatcccc ggggccatgt gaggacagca ggtgggaaag atcatgggtc	780
ctccctgggtc ctgcagggcc agaacattca tcaccatac tgacctocta gatgggaatg	840
gcttccctgg ggctgggcca acggggcctg ggcaggggag aaaggacgtc aggggacagg	900
gaggaagggt catcgagacc cagcctggaa ggttcttgc tctgaccatc caggatttac	960
ttccctgcat ctacctttgg tcattttccc tcagcaatga ccagctctgc ttccctgatct	1020
cagcctccca ccctggacac agcaccacag tccctggccc ggctgcatcc acccaatacc	1080
ctgataaccc aggaccatt acttctaggg taaggagggt ccaggagaca gaagctgagg	1140
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caggagaatg ttgaccacag aaagggaccg aggaccaag aaaggagtca gaccaccagg	1260
gtttgcctga gaggaaggat caaggccccg agggaaagca gggctggctg catgtgcagg	1320
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gactctctac tcaggcctgg acatgctgaa ataggacaat ggccttgctc tctctcccca	1440
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ccagcctgtc caggcccttc cactctccac tttgtgacca tgtccaggac caccctcag	1620
atcctgagcc tgcaaatacc cccttgctgg gtgggtggat tcagtaaaca gtgagctcct	1680

09732169-100201

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BY	
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Title: TISSUE SPECIFIC ADENOVIRAL VECTORS
 Director: Daniel R. HENDERSON and Eric R. SCHULZ
 Publication No.: 09/732,169
 Docket No.: 348022000201

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FIGURE 14B

atccagcccc	cagagccacc	tctgtcacct	tctgtctggg	catcatccca	ccttcacaag	1740
cactaaagag	catggggaga	cctggctagc	tgggtttctg	catcacaag	aaaataatcc	1800
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gcagagggtca	gccctagggg	gggtgggtca	tccacccagg	ggacaggggt	gcaccagcct	1920
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cagcagtcag	aggaggccat	ggcagtggct	gagctcctgc	tccaggcccc	aacagaccag	2040
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gccagatgg	ggagatggat	gtcaggaaag	gctgccccat	cagggagggt	gatagcaatg	3060
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FIGURE 14C

gaggaaaggg cccagctcc tccctttgcc actgagaggg tcgaccctgg gtggccacag 3420
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agacgccaat gacaataaaa agagggacct ccgtcacccg gtaaacatgt ccacacagct 5100

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FIGURE 14D

ccagcaagca cccgtcttcc cagtgaatca ctgtaacctc ccctttaatc agccccaggc 5160
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gatcctagag ctggcccat gattgacagg aaggcaggac ttggcctcca ttctgaagac 6720
taggggtgtc aagagagctg ggcacccac agagctgcac aagatgacgc ggacagaggg 6780

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FIGURE 14E

tgacacaggg	ctcagggcctt	cagacgggtc	gggaggctca	gctgagagtt	cagggacaga	6840
cctgaggagc	ctcagtggga	aaagaagcac	tgaagtggga	agttctggaa	tgttctggac	6900
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tgtgtacctc	cccgtgccc	atcctctcac	agccccgcc	tctagggaca	caactcctgc	7020
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ccccactggg	aaaggcccag	tgtggacggt	tccacagcag	cccagctaag	gcccttggac	7380
acagatcctg	agtgagagaa	ccttttaggga	cacaggtgca	cggccatgtc	cccagtgtcc	7440
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tgagcaaaaa	ggggccagga	gagttgagag	atcagggtcg	gccttggact	aaggctcaga	7800
tggagaggac	tgaggtgcaa	agagggggct	gaagtagggg	agtggtcggg	agagatggga	7860
ggagcaggta	aggggaagcc	ccaggggagg	cgggggaggg	tacagcagag	ctctccactc	7920
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accaacaatg	tctccagact	ttccaaatgt	cccctggaga	gcaaaattgc	ttctggcaga	8100
atcactgac	tacgtcagtc	tctaaaagt	actcatcagc	gaaatccttc	acctcttggg	8160
agaagaatca	caagtgtgag	aggggtagaa	actgcagact	tcaaaatctt	tccaaaagag	8220
ttttacttaa	tcagcagttt	gatgtccag	gagaagatac	atttagagt	tttagagttg	8280
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accacaactg	gaatgacact	cactgggtta	cattacaaag	tggaatgtgg	ggaattctgt	8400
agactttggg	aagggaatg	tatgacgtga	gccacagcc	taaggcagt	gacagtccac	8460
tttgaggctc	tcaccatcta	ggagacatct	cagccatgaa	catagccaca	tctgtcatta	8520

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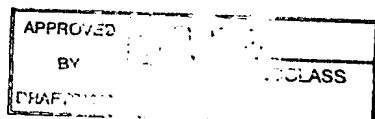


FIGURE 14F

gaaaacatgt tttattaaga ggaaaaatct aggctagaag tgctttatgc tcttttttct 8580
ctttatgttc aaattcatat acttttagat cattccttaa agaagaatct atccccctaa 8640
gtaaatgtta tcaactgactg gatagtgttg gtgtctcact cccaaccctt gtgtggtgac 8700
agtgccttgc tccccagcc ctgggccttc tctgattcct gagagctttg ggtgctcctt 8760
cattaggagg aagagaggaa ggggtgtttt aatattctca ccattcaccc atgcacctct 8820
tagacactgg gaagaatcag ttgcccactc ttggatttga tctctgaatt aatgacctct 8880
atctctgtcc cttgtccatt tcaacaatgt gacaggccta agaggtgcct tctccatgtg 8940
atttttgagg agaaggttct caagataagt tttctcacac ctctttgaat tacctccacc 9000
tgtgtcccca tcaccattac cagcagcatt tggacccttt ttctgttagt cagatgcttt 9060
ccacctcttg aggggtgtata ctgtatgctc tctacacagg aatatgcaga ggaaatagaa 9120
aaagggaaat cgcattacta ttcagagaga agaagacctt tatgtgaatg aatgagagtc 9180
taaaatccta agagagccca tataaaatta ttaccagtgc taaaactaca aaagttacac 9240
taacagtaaa ctagaataat aaaacatgca tcacagttgc tggtaaagct aaatcagata 9300
tttttttctt agaaaaagca ttccatgtgt gttgcagtga tgacaggagt gcccttcagt 9360
caatatgctg cctgtaattt ttgttccttg gcagaatgta ttgtcttttc tccctttaaa 9420
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ctggaggggtg gtgagcctca ctggtggcct gatgcttacc ttgtgccctc acaccagtgg 9660
tcaactggaac cttgaacact tggctgtcgc ccggatctgc agatgtcaag aacttctgga 9720
agtcaaatta ctgccactt ctccagggca gatacctgtg aacatccaaa accatgccac 9780
agaaccctgc ctggggtcta caacacatat ggactgtgag caccaagtcc agccctgaat 9840
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cctggtagtg gtgaggagcc ttgggaccct caggattact ccccttaagc atagtggga 10020
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agaccctgc accaatgaga ccatgctgaa gcctcagaga gagagatgga gctttgacca 10140
ggagccgctc ttccttgagg gccagggcag ggaaagcagg aggcagcacc aggagtggga 10200

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APPROVED BY DRAFTSMAN

FIGURE 14G

acaccagtgt ctaagcccct gatgagaaca ggggtggtctc tcccatatgc ccataccagg 10260
cctgtgaaca gaatcctcct tctgcagtga caatgtctga gaggacgaca tgtttcccg 10320
cctaacgtgc agccatgccc atctaccac tgcctactgc aggacagcac caaccaggga 10380
gctgggaagc tgggagaaga catggaatac ccatggcttc tcaccttct ccagtccagt 10440
gggcaccatt tatgcctagg acaccacct gccggcccca ggctcttaag agttaggtca 10500
cctaggtgcc tctgggaggg cgaggcagga gaattgcttg aaccggggag gcagaggttg 10560
cagtgaagcg agatcacacc actgcactcc agcctgggtg acagaatgag actctgtctc 10620
aaaaaaaaag agaaagatag catcagtggc taccaagggc taggggcagg ggaaggtgga 10680
gagttaatga ttaatagtat gaagtttcta tgtgagatga tgaaaatggt ctggaaaaaa 10740
aaatatagtg gtgaggatgt agaataattg gaatataatt aacggcattt aattgtacac 10800
ttaacatgat taatgtggca tattttatct tatgtatttg actacatcca agaaacactg 10860
ggagagggaa agcccacat gtaaaataca cccaccctaa tcagatagtc ctcattgtac 10920
ccaggtacag gccctcatg acctgcacag gaataactaa ggatttaagg acatgaggct 10980
tcccagccaa ctgcagggtc acaacataaa tgtatctgca aacagactga gagtaaagct 11040
gggggcacaa acctcagcac tgccaggaca cacacccttc tcgtggattc tgactttatc 11100
tgaccgggcc cactgtccag atcttggtgt gggattggga caaggagggt cataaagcct 11160
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cacacataga tctgaccatt aggcattgtg aggaggactc tagcgcgggc tcagggatca 11280
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gcagggttcc tgcagtcac aggtccagct caccctgggt taggtgcccc atccccctga 11400
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cctcactcaa gctgtccaga gagggcagca ccttgagacg cgccacccc acttcactct 11520
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tgagcccaga gatggtgaca gggcaatgat ccaggggcag ctgcctgaaa cgggagcagg 11640
tgaagccaca gatgggagaa gatggttcag gaagaaaaat ccaggaatgg gcaggagagg 11700
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tcagcaggtg aggccaggtc ccatgaacag agaagcagct cccacctccc ctgatgcag 11820
gacacacaga gtgtgtggtg ctgtgcccc agagtcgggc tctctgttc tggccccag 11880
ggagtgaaga gtgaggttga cttgtccctg ctctctctg ctacccaac attcaccttc 11940

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FIGURE 14H

tcctcatgcc cctctctctc aaatatgatt tggatctatg tccccgcca aatctcatgt	12000
caaattgtaa accccaatgt tggagggtgg gccttgtag aagtgattgg ataatgcggg	12060
tggattttct gctttgatgc tgtttctgtg atagagatct cacatgatct ggttgtttaa	12120
aagtgtgtag cacctctccc ctctctctct ctctctctta ctcatgctct gccatgtaag	12180
acgttcctgt ttccccctca ccgtccagaa tgattgtaag tttcttgagg cctccccagg	12240
agcagaagcc actatgcttc ctgtacaact gcagaatgat gagcgaatta aacctctttt	12300
ctttataaat taccagctct cagggtatttc tttatagcaa tgcgaggaca gactaataca	12360
atcttctact ccagatccc cgcacacgct tagccccaga catcactgcc cctgggagca	12420
tgcacagcgc agcctcctgc cgacaaaagc aaagtcacaa aaggtagcaa aaatctgcat	12480
ttggggacat ctgattgtga aagagggagg acagtacact tgtagccaca gagactggg	12540
ctcaccgagc tgaaacctgg tagcactttg gcataacatg tgcattgccc gtgttcaatg	12600
tctagagatc agtggtgagt aaaacagcct ggtctggggc cgctgctgtc cccacttccc	12660
tcctgtccac cagagggcgg cagagttcct cccaccctgg agcctcccca ggggctgctg	12720
acctccctca gccgggcccc cagcccagca ggggtccccc tcacccgggt cacctcggcc	12780
cacgtcctcc tcgccctccg agtcctcac acggactctg tcagtcctc cctgcagcct	12840
atcgcccgcc cacctgaggc ttgtcggccg cccacttgag gcctgtcggc tgccctctgc	12900
aggcagctcc tgtccctac acccctcct tccccgggt cagctgaaag ggcgtctccc	12960
agggcagctc cctgtgatct ccaggacagc tcagtctctc acaggctccg acgcccccta	13020
tgctgtcacc tcacagccct gtcattacca ttaactctc agtcccatga agttcactga	13080
gcgcctgtct cccggttaca ggaaaactct gtgacagga ccacgtctgt cctgctctct	13140
gtggaatccc agggcccagc ccagtgctg acacggaaca gatgctccat aaatactggt	13200
taaattgtgtg ggagatctct aaaaagaagc atatcacctc cgtgtggccc ccagcagtca	13260
gagtctgttc catgtggaca caggggcact ggcaccagca tgggaggagg ccagcaagtg	13320
cccgcggtg cccaggaat gaggcctcaa ccccagagc ttcagaaggg aggacagagg	13380
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FIGURE 14I

caacagaccc ttctgatctc tccacatac ctgctctgtt cctttctggg tcctatgagg	13680
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aaggtggggg gatcacagga cagtcagcct cgcagagaca gagaccaccc aggactgtca	13800
gggagaacat ggacaggccc tgagccgcag ctgagccaac agacacggag agggaggggtc	13860
cccctggagc cttccccaaag gacagcagag cccagagtca cccacctccc tcaccacag	13920
tcctctcttt ccaggacaca caagacacct cccctccac atgcaggatc tggggactcc	13980
tgagacctct gggcctgggt ctccatccct gggtcagtgg cggggttggt ggtactggag	14040
acagaggggt ggtccctccc cagccaccac ccagtgagcc tttttctagc cccagagcc	14100
acctctgtca ctttctgtt gggcatcatc ccacctccc agagccctgg agagcatggg	14160
gagaccggg accctgctgg gtttctctgt cacaaaggaa aataatcccc ctggtgtgac	14220
agaccaagg acagaacaca gcagaggtca gcaactggga agacagggtg tcctcccagg	14280
ggatgggggt ccattccacct tgccgaaaag atttgtctga ggaactgaaa atagaaggga	14340
aaaaagagga gggacaaaag aggcagaaat gagaggggag gggacagagg acacctgaat	14400
aaagaccaca cccatgaccc acgtgatgct gagaagtact cctgccctag gaagagactc	14460
agggcagagg gaggaaggac agcagaccag acagtcacag cagccttgac aaaacgttcc	14520
tggaaactcaa gctcttctcc acagaggagg acagagcaga cagcagagac catggagtct	14580
ccctcgcccc ctccccacag atggtgcatc ccctggcaga ggctcctgct cacaggtgaa	14640
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ctgtgagacg gacagagggc tcctgttgga gcctgaatag ggaagaggac atcagagagg	14760
gacaggagtc acaccagaaa aatcaaattg aactggaatt ggaaaggggc aggaaaacct	14820
caagagttct attttcctag ttaattgtca ctggccacta cgtttttaaa aatcataata	14880
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cgcctaccgc ggacattgga aaataagccc caggctgtgg agggccctgg gaaccctcat	15000
gaactcatcc acaggaatct gcagcctgtc ccaggcactg gggtgcaacc aagatc	15056

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APPROVED	D.G.F.
BY	CLERK
DRAFTSMAN	

FIGURE 15A

aagcttctag ttttcttttc ccggtgacat cgtggaaagc actagcatct ctaagcaatg 60
atctgtgaca atattcacag tgtaatgcca tccagggaaac tcaactgagc cttgatgtcc 120
agagattttt gtgttttttt ctgagactga gtctcgtctt gtgccaggct ggagtgcaagt 180
ggtgcaacct tggctcactg caagctccgc ctctggggtt cagccattc tctgcctca 240
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ttttagtaga gatgggggtt cactgtgtta gccaggatgg tctcagtctc ctgacctcgt 360
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tggaaaagaa aaagaaagaa aggaaaaaaa aaaaaaaaaa gagatgacct ctcaggctct 720
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cttgaccctc tcttttaggg ctctttctga cctccaccat ggtactagga cccattgta 1200
ttctgtaccc tcttgactct atgaccccca ctgccactg catccagctg ggtccctcc 1260
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cctgagatta ggaatcctca atcttatact gggacaactt gcaaactgc tcagccttg 1620
tctctgatga agatattatc ttcattgatct tggattgaaa acagacctac tctggaggaa 1680

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FIGURE 15B

catattgtat cgattgtcct tgacagtaaa caaatctgtt gtaagagaca ttatctttat 1740
tatctaggac agtaagcaag cctggatctg agagagatat catcttgcaa ggatgcctgc 1800
tttacaacaca tccttgaaac aacaatccag aaaaaaaaaag gtgttgctgt ctttgctcag 1860
aagacacaca gatacgtgac agaaccatgg agaattgcct cccaacgctg ttcagccaga 1920
gccttcacc cttgtctgca ggacagtctc aacgttcac cattaaatac ttcttctatc 1980
acatcctgct tctttatgcc taaccaaggt tctaggtccc gatcgactgt gtctggcagc 2040
actccactgc caaaccacaga ataaggcagc gctcaggatc ccgaaggggc atggctgggg 2100
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agtagggggg ggaggcacgg actcctgtga ggtcacagcc aaggagcat catcatgggt 3060
ggggaggagg caatggacag gcttgagaac ggggatgtgg ttgtatttgg ttttctttgg 3120
ttagataaag tgctgggtat aggattgaga gtggagtatg aagaccagtt aggatggagg 3180
atcagattgg agttgggtta gataaagtgc tgggtatagg attgagagtg gagtatgaag 3240
accagttagg atggaggatc agattggagt tgggttagag atggggtaaa attgtgctcc 3300
ggatgagttt gggattgaca ctgtggaggt gggttgggat ggcattggctt tgggatggaa 3360

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APPROVED	J.C.H.
BY	CHAS
DRAFTSMAN	

FIGURE 15C

atagatttgt tttgatgttg gctcagacat ccttggggat tgaactggg atgaagctgg 3420
gtttgatttt ggaggtagaa gacgtggaag tagctgtcag atttgacagt ggccatgagt 3480
tttgtttgat ggggaatcaa acaatggggg aagacataag gggttggttg ttaggttaag 3540
ttgcgttggg ttgatgggt cggggctgtg tataatgcag ttggattggt ttgtattaaa 3600
ttgggttggg tcagggtttg gttgaggatg agttgaggat atgcttgggg acaccggatc 3660
catgaggttc tcaactggagt ggagacaaac ttcctttcca ggatgaatcc agggaagcct 3720
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agatggtcct aaattgtgat tatctatac cacttctgtc tccctcactg tgcttggagt 3840
ttacctgac actcaactag aaacagggga agattttatc aaattctttt tttttttttt 3900
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gctcactgca acctctgct cccaggttca agtgattctc ctgcctcage ctctgagtt 4020
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cagcctccca aagtgtggg attacaggcg tcagccaccg cgcccagcca cttttgtcaa 4200
attcttgaga cacagctcgg gctggatcaa gtgagctact ctggttttat tgaacagctg 4260
aaataaccaa ctttttgga attgatgaaa tcttacggag ttaacagtgg aggtaccagg 4320
gctcttaaga gttcccatt ctcttctgag actacaaatt gtgattttgc atgccacctt 4380
aatctttttt tttttttttt taaatcgagg ttccagtctc attctatttc ccaggctgga 4440
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ctgtctctac taaaaaaaaa aaaaatagaa aaattagccg ggcgtggtgg cacacggcac 4740
ctgtaatccc agctactgag gaggtgagg caggagaatc acttgaaccc agaaggcaga 4800
ggttgcaatg agccgagatt gcgccactgc actccagcct ggggtgacaga gtgagactct 4860
gtctcaaaaa aaaaaattt tttttttttt tttgtagaga tggatcttgc tttgtttctc 4920
tggttggcct tgaactcctg gcttcaagt atcctcctac cttggcctcg gaaagtgttg 4980
ggattacagg cgtgagccac catgactgac ctgtcgtaa tcttgaggta cataaacctg 5040
gctcctaaag gctaaaggct aaatatttgt tggagaaggg gcattggatt ttgcatgagg 5100

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BY	CLASS
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Title: TISSUE SPECIFIC ADENOVIRAL VECTORS
Inventor: Daniel R. HENDERSON and Eric R. SCHUUP
Application No.: 09/732,169
Docket No.: 348022000201

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FIGURE 15D

atgattctga cctgggaggg caggtcagca ggcatctctg ttgcacagat agagtgtaca 5160
ggtctggaga acaaggagtg gggggttatt ggaattccac attgtttgct gcacgttgga 5220
ttttgaaatg ctagggaact ttgggagact catatttctg ggctagagga tctgtggacc 5280
acaagatctt tttatgatga cagtagcaat gtatctgtgg agctggattc tgggttggga 5340
gtgcaaggaa aagaatgtac taaatgccaa gacatctatt tcaggagcat gaggaataaa 5400
agttctagtt tctgggtctca gagtgggtgca gggatcaggg agtctcacia tctcctgagt 5460
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gatctagtaa ttgcagaaca gcaagtgcta gctctccctc cccctccaca gctctgggtg 5700
tgaggagggg ttgtccagcc tccagcagca tggggagggc cttgggtcagc ctctgggtgc 5760
cagcagggca ggggcggagt cctgggggaat gaaggtttta tagggctcct gggggaggct 5820
ccccagcccc aagctt 5836

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FIGURE 16A

gaattcagaa ataggggaag gttgaggaag gacactgaac tcaaagggga tacagtgatt 60
ggtttatttg tcttctcttc acaacattgg tgctggagga attcccaccc tgagggttatg 120
aagatgtctg aacacccaac acatagcact ggagatatga gctcgacaag agtttctcag 180
ccacagagat tcacagccta gggcaggagg acactgtacg ccaggcagaa tgacatggga 240
attgcgctca cgattggctt gaagaagcaa ggactgtggg aggtgggctt tgtagtaaca 300
agagggcagg gtgaactctg attcccatgg gggaatgtga tggtcctgtt acaaattttt 360
caagctggca ggggaataaaa cccattacgg tgaggacctg tggagggcgg ctgccccaac 420
tgataaagga aatagccagg tgggggcctt tcccattgta ggggggacat atctggcaat 480
agaagccttt gagacccttt aggttacaag tactgaggca gcaaataaaa tgaaatctta 540
ttttcaact ttatactgca tgggtgtgaa gatatatattg tttctgtaca gggggtgagg 600
gaaaggaggg gaggaggaaa gttcctgcag gtctggtttg gtcttgtgat ccaggggggtc 660
ttggaactat ttaaattaaa ttaaattaaa acaagcgact gttttaaatt aaattaaatt 720
aaattaaatt ttactttatt ttatcttaag ttctgggcta catgtgcagg acgtgcagct 780
ttgttacata ggtaaactg tgccatggtg gtttgcgtga cctatcaacc catcacctag 840
gtattaagcc cagcatgcat tagctgtttt tctgacgct ctccctctcc ctgactccca 900
caacaggccc cagtgtgtgt tgttcccctc cctgtgtcca tgtgttctca ttgttcagct 960
cccacttata agtgagaaca tgtggtgttt ggttttctgt ttctgtgtta gtttgcgtgag 1020
gataatggct tccacctcca tccatgttcc tgcaaaggac gtgatcttat tcttttttat 1080
ggttgcatag aaattgtttt tacaaatcca attgatattg tatttaatta caagttaatc 1140
taattagcat actagaagag attacagaag atattaggta cattgaatga ggaaatatat 1200
aaaataggac gaaggtgaaa tattaggtag gaaaagtata atagttgaaa gaagtaaaaa 1260
aaaatatgca tgagtagcag aatgtaaaag aggtgaagaa cgtaatagtg actttttaga 1320
ccagattgaa ggacagagac agaaaaattt taaggaattg ctaaaccatg tgagtgttag 1380
aagtacagtc aataacatta aagcctcagg aggagaaaag aatacgaaag gaggaatat 1440
gtgaataaat agtagagaca tgtttgatgg attttaaaat atttgaaaga cctcacatca 1500
aaggattcat accgtgccat tgaagaggaa gatggaaaag ccaagaagcc agatgaaagt 1560
tagaaatatt attggcaaag cttaaattgtt aaaagtccta gagagaaagg atggcagaaa 1620
tattggcggg aaagaatgca gaacctagaa tataaattca tcccacagct ttggtagtgt 1680

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APPROVED	BY	DATE	CLASS
DRAFTSMAN			

FIGURE 16B

gcagctgtag ccttttctag ataatacact attgtcatac atcgcttaag cgagtgtaaa 1740
atggtctect cactttatatt atttatatat ttatttagtt ttgagatgga gcctcgctct 1800
gtctcttagg ctggagtga atagtgcgat accactcact gcaacctctg cctcctctgt 1860
tcaagtgatt ttcttacctc agcctcccga gtagctggga ttacagggtgc gtgccaccac 1920
acccggctaa tttttgtatt tttttagtag acgggggttt gccatgttgg ccaggctggt 1980
cttgaactcc tgacatcagg tgatccacct gccttggcct cctaaagtgc tgggattaca 2040
ggcatgagcc accgtgcca accactttat ttatttttta tttttatttt taaatttcag 2100
cttctatttg aaatacaggg ggcacatata taggattggt acatgggtat attgaactca 2160
ggtagtgatc atactaccca acaggtaggt tttcaaccca ctccccctct tttctcccc 2220
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agctcccacc tgtaagtga aacgtgtggt atttgatttt ctgtccctgt gtttaattcac 2340
ttaggattat ggcttccagc tccattcata ttgctgtaaa ggatatgatt catttttcat 2400
ggccatgcag tattccatat tgcgtataga tcacattttc tttctttttt ttttttgaga 2460
cggagtcttg ctttgctgcc taggctggag tgcagtagca cgatctggc tcaactgcaag 2520
cttcacctcc ggggttcacg tcattcttct gtctcagctt cccaagtagc tgggactaca 2580
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actgtgttag ccaggatggt cttgatctcc tgacctgtg gtccacctgc ctgggtctcc 2700
caaagtgtg ggattacagg ggtgagccac tgcgcccggc ccatatatac cacattttct 2760
ttaaccaatc caccattgat gggcaactag gtagattcca tggattccac agttttgcta 2820
ttgtgtgcag tgtggcagta gacatatgaa tgaatgtgtc tttttggtat aatgatttgc 2880
attccttttg gtatacagtc attaatagga gtgctgggtt gaacggtggc tctgtttaaa 2940
attctttgag aattttccaa actgtttgcc atagagagca aactaattta catttccacg 3000
aacagtatat aagcattccc tttctccac agctttgtca tcatggtttt ttttttctt 3060
tattttaaaa aagaatatgt tgttgttttc ccagggtaca tgtgcaggat gtgcagggtt 3120
gttacatagg tagtaaacgt gagccatggt ggtttgctgc acctgtcaac ccattacctg 3180
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caccctgaca gggcaaacag acaacctaca gaatgggagg aaatttttgc aatctattca 3300
tctgacaaag gtcaagaata tccagaatct acaaggaact taagcaaatt tttactttt 3360

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APPROVED	O.G. 11
BY	CLASS
DEPARTMENT	STAFF

Title: TISSUE SPECIFIC ADENOVIRAL VECTORS
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FIGURE 16C

aataatagcc actctgactg gcgtgaaatg gtatctcatt gtggttttca tttgaatttc 3420
tctgatgac agtgacgatg agcatttttt catatttggt ggctgcttgt acgtcttttg 3480
agaagtgtct cttcatgcct tttggccact ttaatgggat tattttttgc tttttagttt 3540
aagttcctta tagattctgg atattagact tcttattgga tgcatagttt gtgaatactc 3600
tcttcattc tgtaggttgt ctgtttactc tattgatggc ttcttttgct gtgccgaagc 3660
atcttagttt aattagaaac cacctgccaa tttttgtttt tgttgcaatt gcttttgggg 3720
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tgaaactcct gacctcaaac gatctgcctg ccttggcctc ccaaagtgt gggattacag 4260
gtgtgagcca ctgtgcccag ccaagaatgt cattttctaa gaggtccaag aacctcaaga 4320
tattttggga ccttgagaag agaggaattc atacaggat tacaagcaca gcctaattggc 4380
aaatctttgg catggcttgg cttcaagact ttaggtcttt aaaagtcgaa tccaaaaatt 4440
tttataaaag ctccagctaa gctaccttaa aaggggcctg tatggctgat cactcttctt 4500
gctatacttt acacaaataa acaggccaaa tataatgagg ccaaaattta ttttgcaaat 4560
aaattggtcc tgctatgatt tactcttggg aagaacaggg aaaatagaga aaaatttaga 4620
ttgcatctga cttttttttc tgaattttta tatgtgccta caatttgagc taaatcctga 4680
attattttct gggtgcaaaa actctctaaa gaagaacttg gttttcattg tcttcgtgac 4740
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cttacagttc tactcttcaa attattgtta tgtgtatctc atagttttcc ttcttttgag 4860
aaaactgaag ccatggtatt ctgaggacta gagatgactc aacagagctg gtgaatctcc 4920
tcatatgcaa tccactgggc tcgatctgct tcaaattgct gatgactgc tgctaaagct 4980
atacatttaa aacctcact aaaggatcag ggaccatcat ggaagaggag gaaacatgaa 5040
attgtaagag ccagattcgg ggggtagagt gtggaggta gagcaactcc acctgaata 5100

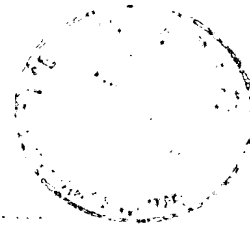
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APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

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FIGURE 16D



agaaggtaaa gcaacctatc ctgaaagcta acctgccatg gtggcttctg attaacctct 5160
 gttctaggaa gactgacagt ttgggtctgt gtcattgccc aaatctcatg ttaaattgta 5220
 atccccagtg ttccggaggtg ggacttggtg gtaggtgatt cggtcatggg agtagatttt 5280
 cttcttttctg gtgttacagt gatagtgagt gagttctcgt gagatctggt catttaaaag 5340
 tgtgtggccc ctccccctcc tctcttggtc ctccactgc catgtaagat acctgctcct 5400
 gctttgcctt ctaccataag taaaagcccc ctgaggcctc ccagaagca gatgccacca 5460
 tgcttctgt acagcctgca gaaccatcag ccaattaaac ctcttttctg tataaattac 5520
 cagtcttgag tatctcttta cagcagtgtg agaacggact aatacaaggg tctccaaaat 5580
 tccaagttta tgtattcttt cttgccaaat agcaggtatt taccataaat cctgtcctta 5640
 ggtcaaacia ccttgatggc atcgtacttc aattgtctta cacattcctt ctgaatgact 5700
 cctccccat ggcatataag ccctgggtct tgggggataa tggcagaggg gtccaccatc 5760
 ttgtctggct gccacotgag acacggacat ggcttctgtt ggtaagtctc tattaaatgt 5820
 ttctttctaa gaaactggat ttgtcagctt gtttctttgg cctctcagct tctcagact 5880
 ttggggtagg ttgcacaacc ctgcccacca cgaaacaaat gtttaatatg ataaatatgg 5940
 atagatataa tccacataaa taaaagctct tggagggccc tcaataattg ttaagagtgt 6000
 aaatgtgtcc aaagatggaa aatgtttgag aactactgtc ccagagattt tctgagttc 6060
 tagagtgtgg gaatatagaa cctggagctt ggcttcttca gcctagaatc aggagtatgg 6120
 ggctgaagtc tgaagcttgg cttcagcagt ttgggggttg cttccggagc acatatttga 6180
 catgttgcca ctgtgatttg gggtttggtt tttgctctga atcctaattg ctgtccttga 6240
 ggcatctaga atctgaaatc tgtggtcaga attctattat cttgagtagg acatctccag 6300
 tcttggttct gccttctagg gctggagtct gtagtcagt accegggtctg gcatttcaac 6360
 ttcatataca gtgggctatc ttttggtcca tgtttcaacc aaacaaccga ataaaccatt 6420
 agaacctttc cccacttccc tagctgcaat gttaaacctt ggatttctgt ttaataggtt 6480
 catatgaata atttcagcct gatccaactt tacattcctt ctaccgttat tctacacca 6540
 ccttaaaaat gcattcccaa tatattcctt ggattctacc tatatatggg aatcctgggt 6600
 ttgccagttt ctagtgcatt aacatacctg atttacattc ttttacttta aagtggaaat 6660
 aagagtcctt ctgcagagtt caggagttct caagatggcc ctacttctg acatcaattg 6720
 agatttcaag ggagtcgcca agatcatcct cagggttcagt gattgctggg agccctcata 6780

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APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

FIGURE 16E



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taactcaatg aaagctgtta tgctcatggc tatggtttat tacagcaaaa gaatagagat 6840
 gaaaatctag caagggaaga gttgcatggg gcaaagacaa ggagagctcc aagtgcagag 6900
 attcctggtg ttttctccca gtggtgtcat ggaaagcagt atcttctcca tacaatgatg 6960
 tgtgataata ttcagtgtat tgccaatcag ggaactcaac tgagccttga ttatattgga 7020
 gcttggttgc acagacatgt cgaccacctt catggctgaa cttagtact tagccctcc 7080
 agacgtctac agctgatagg ctgtaacca acattgtcac cataaatcac attgttagac 7140
 tatccagtgt ggccaagct cccgtgtaa cacaggcact ctaaacaggc aggatatttc 7200
 aaaagcttag agatgacctc ccaggagctg aatgcaaaga cctggcctct ttgggcaagg 7260
 agaatccttt accgcacact ctcttcaca gggttattgt gaggatcaaa tgtggtcatg 7320
 tgtgtgagac accagcacat gtctggtgt ggagagtgc ttctatgtgt gctaacattg 7380
 ctgagtgcta agaaagtatt aggcattggt ttcagcactc acagatgctc atctaactct 7440
 cacaacatgg ctacaggtg ggcactacta gcctcatttg acagaggaaa ggactgtgga 7500
 taagaagggg gtgaccaata ggtcagagtc attctggatg caaggggctc cagaggacca 7560
 tgattagaca ttgtctgcag agaaattatg gctggatgtc tctgccccgg aaagggggat 7620
 gcactttcct tgaccccta tctcagatct tgactttgag gttatctcag acttctcta 7680
 tgataccagg agcccatcat aatctctctg tgtctctcc ccttctcag tcttactgcc 7740
 cactcttccc agctccatct ccagctggcc aggtgtagcc acagtaccta actctttgca 7800
 gagaactata aatgtgtatc ctacagggga gaaaaaaaaa aagaactctg aaagagctga 7860
 cattttaccg acttgcaaac acataagcta acctgccagt tttgtgctgg tagaactcat 7920
 gagactcctg ggtcagaggc aaaagatttt attaccaca gctaaggagg cagcatgaac 7980
 tttgtgttca catttggttca ctttgcccc caattcatat gggatgatca gagcagttca 8040
 ggtggatgga cacaggggtt tgtggcaaag gtgagcaacc taggcttaga aatcctcaat 8100
 ctataagaa ggtactagca aactgtcca gtctttgtat ctgacggaga tattatcttt 8160
 ataattgggt tgaaagcaga cctactctgg aggaacatat tgtatttatt gtcctgaaca 8220
 gtaaacaat ctgctgtaaa atagacgta actttattat ctaaggcagt aagcaaacct 8280
 agatctgaag gcgataccat cttgcaaggc tatctgctgt acaaatatgc ttgaaaagat 8340
 ggtccagaaa agaaaacggt attattgcct ttgctcagaa gacacacaga aacataagag 8400
 aaccatggaa aattgtctcc caacactgtt caccagagc cttcactct tgtctgcagg 8460
 acagtcttaa catcccatca ttagtgtgtc taccacatct ggcttcaccg tgcctaacca 8520

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTS: /AN		

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FIGURE 16F

agatttctag gtccagttcc ccaccatggt tggcagtgcc ccactgccaa cccagaata 8580
 agggagtgtc cagaattccg aggggacatg ggtggggatc agaacttctg ggcttgagtg 8640
 cagagggggc ccatactcct tggttccgaa ggaggaagag gctggagggtg aatgtccttg 8700
 gaggggagga atgtgggttc tgaactctta aatccccaag ggaggagact ggtaagggtc 8760
 cagcttccga ggtactgacg tgggaatggc ctgagaggtc taagaatccc gtatcctcgg 8820
 gaaggagggg ctgaaattgt gaggggttga gttgcagggg tttgttagct tgagactcct 8880
 tgggtgggtcc ctgggaagca aggactggaa ccattggctc cagggttttg tgtgaaggta 8940
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 ccactactc cttactccac ttgagggtaa tcacctactc ttctagttcc acaagagtgc 9060
 gcctgcgcga gtataatctg cacatgtgcc atgtcccagag gcctggggca tcatccactc 9120
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 ggttatcatg gggatgagga tatgcttggg acatggattc aggtggttct cattcaagct 10140
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APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
CHAIRSMAN		

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FIGURE 16G

ggccactggc tgtgaatata cctctatcct ggtcttgaat tgtgattata tatgtccatt 10260
 ctgtctcctt cactgtactt ggaattgata tggtcattca gctggaaatg ggggaagatt 10320
 ttgtcaaatt cttgagacac agctgggtct ggatcagcgt aagccttcct tctgggtttta 10380
 ttgaacagat gaaatcacat tttttttttt aaaatcacag aaatcttata gagttaacag 10440
 tggactctta taataagagt taacaccagg actcttattc ttgattcttt tctgagacac 10500
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APPROVED	O.G. FIG.	
BY	CLASS	SUBJECTS
WITNESSES		

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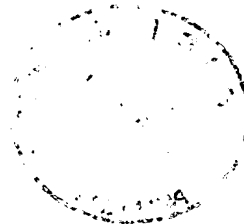


FIGURE 16H

taggtgcaa cagggcaagg gcggggctct ggagaatgaa ggctttatag ggctcctcag 12000
 ggaggccccc cagcccacaa ctgcaccacc tggccgtgga caccggt 12047

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APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
CRAFTSMAN		

Title: TISSUE SPECIFIC ADENOVIRAL VECTORS

Inventor: Daniel R. HENDERSON and Eric R. SCHMIDT

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FIGURE 17

cgagcggccc ctcagcttcg gcgcccagcc ccgcaaggct cccggtgacc actagagggc 60
 gggaggagct cctggccagt ggtggagagt ggcaaggaag gaccctaggg ttcctcgag 120
 cccaggttta ctcccttaag tggaaatttc ttccccact cctccttggc tttctccaag 180
 gagggaaacc aggtctgttg aaagtccggc tggggcgggg actgtgggtt caggggagaa 240
 cggggtgttg aacgggacag ggagcggtta gaagggtggg gctattccgg gaagtgggtg 300
 ggggaggag cccaaaacta gcacctagtc cactcattat ccagccctct tatttctcgg 360
 ccgctctgct tcagtggacc cggggagggc ggggaagtgg agtgggagac ctaggggttg 420
 gcttcccgac cttgctgtac aggacctga cctagctggc ttgttcccc atccccacgt 480
 tagttgttg cctgaggcta aaactagagc ccaggggccc caagttccag actgccctc 540
 cccctcccc cggagccagg gagtggttgg tgaaagggg aggccagctg gagaacaaac 600
 gggtagtcag ggggttgagc gattagagcc cttgtaccct acccaggaat ggttggggag 660
 gaggaggaag aggtaggagg taggggaggg ggcgggggtt tgtcacctgt cacctgctcg 720
 ctgtgcctag ggcgggaggc cggggagtgg ggggaccggt ataaagcggg aggcgcctgt 780
 gcccgctcca cctctcaagc agccagcgcc tgctgaatc tgttctgcc cctccccacc 840
 catttcacca ccaccatg 858

09732169-100201

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

Title: TISSUE SPECIFIC ADENOVIRAL VECTORS
 Inventor: Daniel R. HENDERSON and Eric R. SCHUUR
 Application No.: 09/732,169
 Docket No.: 348022000201

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FIGURE 18

aagcttccac aagtgcattt agcctctcca gtattgctga tgaatccaca gttcaggttc 60
 aatggcggttc aaaacttgat caaaaatgac cagactttat attcttacac caacatctat 120
 ctgattggag gaatggataa tagtcatcat gtttaaacad ctaccattcc agttaagaaa 180
 atatgatagc atcttgttct tagtcttttt cttaataggg acataaagcc cacaaataaa 240
 aatatgcctg aagaatggga caggcattgg gcattgtcca tgcctagtaa agtactccaa 300
 gaacctatct gtatactaga tgacacaatg tcaatgtctg tgtacaactg ccaactggga 360
 tgcaagacac tgcccatgcc aatcatcctg aaaagcagct ataaaaagca ggaagctact 420
 ctgcaccttg tcagtgaggt ccagatacct acag 454

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APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

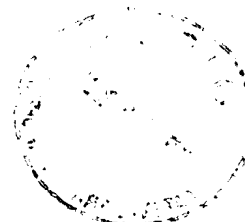
Title: TISSUE SPECIFIC ADENOVIRAL VECTORS

Inventor: Daniel R. HENDERSON and Eric R. SCHUB

Application No.: 09/732,169

Bucket No.: 348022000201

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g atg acc ggc tca acc atc gcg ccc aca acg gac tat cgc aac acc act 49
Met Thr Gly Ser Thr Ile Ala Pro Thr Thr Asp Tyr Arg Asn Thr Thr
1 5 10 15

gct acc gga cta aca tct gcc cta aat tta ccc caa gtt cat gcc ttt 97
Ala Thr Gly Leu Thr Ser Ala Leu Asn Leu Pro Gln Val His Ala Phe
20 25 30

gtc aat gac tgg gcg agc ttg gac atg tgg tgg ttt tcc ata gcg ctt 145
Val Asn Asp Trp Ala Ser Leu Asp Met Trp Trp Phe Ser Ile Ala Leu
35 40 45

atg ttt gtt tgc ctt att att atg tgg ctt att tgt tgc cta aag cgc 193
Met Phe Val Cys Leu Ile Ile Met Trp Leu Ile Cys Cys Leu Lys Arg
50 55 60

aga cgc gcc aga ccc ccc atc tat agg cct atc att gtg ctc aac cca 241
Arg Arg Ala Arg Pro Pro Ile Tyr Arg Pro Ile Ile Val Leu Asn Pro
65 70 75 80

cac aat gaa aaa att cat aga ttg gac ggt ctg aaa cca tgt tct ctt 289
His Asn Glu Lys Ile His Arg Leu Asp Gly Leu Lys Pro Cys Ser Leu
85 90 95

ctt tta cag tat gat taa 307
Leu Leu Gln Tyr Asp
100

FIGURE 19

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